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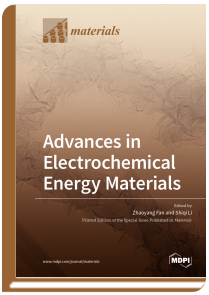
Special Issue Reprint

Advances in Electrochemical Energy Materials



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Electrochemical energy storage is becoming essential for portable electronics, electrified transportation, integration of intermittent renewable energy into grids, and many other energy and power applications. The electrode materials and their structures, in addition to the electrolytes, play key roles in supporting a multitude of coupled physicochemical processes that include electronic, ionic, and diffusive transport in electrode and electrolyte phases, electrochemical reactions and material phase changes, as well as mechanical and thermal stresses, thus determining the storage energy density and power density, conversion efficiency, performance lifetime, and system cost and safety. Different material chemistries and multiscale porous structures are being investigated for high performance and low cost. The aim of this Special Issue is to report the recent advances in materials used in electrochemical energy storage that encompass supercapacitors and rechargeable batteries.

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